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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,091

06/20/2006

Shoichi Hirano

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11/20/2009

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EXAMINER

SYKES, ALTREV C

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

11/20/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/564,091	Applicant(s) HIRANO ET AL.	
	Examiner ALTREV C. SYKES	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 17-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20090415, 20090807</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment to the claims filed June 22, 2009 is acknowledged by examiner and has been entered. Claim 4 has been cancelled. Claims 1, 17, and 20 have been amended. Claims 1-3, 5-8, and 17-22 are pending.

Response to Arguments

2. Applicant's arguments filed June 22, 2009 have been fully considered but they are not persuasive.

Applicant argues the direct carboxymethylation to the cellulose fiber as taught by Hirano et al. cannot be applied to the teaching by Soane et al. The references teach different treatments direct on the cotton fiber or cellulose fiber. Therefore, Soane et al. cannot be combined with Hirano et al. in order to obtain the invention recited in amended claims 1, 17, and 20.

Examiner is not persuaded. Soane et al. further discloses altering the properties of the textile fiber materials to include detergent free washing. (See Col 5, lines 1-5 and Col 9, lines 22-26) Soane et al. discloses the graft copolymer is applied to the materials, such as cotton fabric (a hydrophilic surface) to produce a durable hydrophilic coating. (See Col 13, lines 4-6) Soane et al. discloses the multifunctional polymers also may be used to

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form hydrophilic coatings non-covalently on hydrophobic surfaces of materials. The non-covalent coatings thus may be used to give the materials more comfortable wear properties, and enhance durability. (See Col 15, lines 35-37) Hirano et al. discloses hydrophilization processing can be carried out by carrying out the graft of the hydrophilic molecule to the grafted cellulose fiber. (See [0038]) Therefore, examiner notes both references are directed to the use of graft polymerization to produce hydrophilic coatings of cellulosic materials. The art is still deemed analogous and in the same field of endeavor.

3. Applicant argues in Soane et al., the hydrophilic region is used for combining the cotton with the multifunctional polymer, thereby the surface of the treated cotton having a hydrophilic surface, and the hydrophilic regions of both the cotton and the multifunctional polymers are consumed by the Soane's treatment. In Soane et al., the surface of the treated cotton is less hydrophilic. On the contrary, Hirano et al. teach making the cellulose textile more hydrophilic. *See* paragraph [0008]. In Hirano et al., the surface of the treated cellulose is more hydrophilic. Applicant argues although the Examiner states that Soane et al. disclose altering the properties of the textile fiber materials to include detergent free washing (page 3, lines 1-2 of the outstanding Office Action), the teaching by Soane et al. is to increase hydrophobicity. The property obtained by making textile hydrophobic must have been derived from the mechanism different from the property obtained by making textile hydrophilic. Because the teaching by

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Hirano et al. is to make the cellulose textile more hydrophilic, one of ordinary skilled in the art should consider that Soane et al. cannot be combined with Hirano et al.

Examiner is not persuaded. First, examiner notes that no degree of hydrophilicity is claimed by applicant. As such, it is of no moment whether the one fabric is more hydrophilic than the other when both references are directed to fibers/fabric treated with polymers which are directed to providing a hydrophilic property thereon. Additionally, examiner notes that applicant has not provided any evidentiary support for this argument thereby making it nothing more than a conclusory statement. Further, Soane et al. discloses the graft copolymer is applied to the materials, such as cotton fabric (a hydrophilic surface) to produce a durable hydrophilic coating. (See Col 13, lines 4-6) As such, the reference is not limited to a hydrophobic textile as argued by applicant. Finally, Soane et al. further discloses altering the properties of the textile fiber materials to include detergent free washing. (See Col 5, lines 1-5 and Col 9, lines 22-26)

4. Applicant argues the translation of paragraph [0008] of Hirano et al. stating that Hirano et al. deny the idea to make it difficult to attach dirt. Hirano et al. then propose making the textile more hydrophilic in order to make it easy to remove the dirt. We consider that Hirano et al. do not teach soil (dirt) repellent property, but to teach making the textile more hydrophilic. The teaching by Soane et al. is not compatible with the teaching by Hirano et al. If applying Hirano et al. to Soane et al., the objective of Soane et al., making the cotton hydrophobic, will be destroyed. Therefore, there is teaching away from

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combining Soane et al. with Hirano et al. It appears that the Examiner reads the computer translation of Hirano et al. Applicants herewith submit a translation of paragraph [0008] of Hirano et al., which the Applicants believe more helpful for the Examiner to understand the teaching by Hirano et al.

Examiner is not persuaded by the submitted translation of applicant. It is the examiner's position that while Hirano et al. may or may not be directed to making a textile soil (dirt) repellent, the reference clearly teaches the method steps as claimed by applicant and set forth in the last mailed office action. As such, applicant is reminded that a reference is relevant for all that it contains and is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned." *In re Heck*, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) Therefore, the combination of Soane et al. and Hirano et al. is still deemed proper because both references are directed to a process of using graft polymerization to provide a hydrophilic property to a textile product. Soane et al. further discloses altering the properties of the textile fiber materials to include detergent free washing. (See Col 5, lines 1-5 and Col 9, lines 22-26) As Soane et al. is clear about the potential modification of the methods and compounds to improve properties such as water resistance, grease and oil repellency, soil repellency, permanent press, etc. one of ordinary skill in the art at the time of the invention would have been easily motivated by expected success to utilize the explicit steps of Hirano et al. to arrive at applicant's invention. (See at least Abstract of Soane)

5. Applicant argues Soane et al. teach making the textile hydrophobic, whereas Hirano et al. teach making the textile more hydrophilic. Thus, one skilled in the art does not combine Hirano et al. with Soane et al.

Examiner is not persuaded. Soane et al. further discloses altering the properties of the textile fiber materials to include detergent free washing. (See Col 5, lines 1-5 and Col 9, lines 22-26) Soane et al. discloses the graft copolymer is applied to the materials, such as cotton fabric (a hydrophilic surface) to produce a durable hydrophilic coating. (See Col 13, lines 4-6) Soane et al. discloses the multifunctional polymers also may be used to form hydrophilic coatings non-covalently on hydrophobic surfaces of materials. The non-covalent coatings thus may be used to give the materials more comfortable wear properties, and enhance durability. (See Col 15, lines 35-37) Hirano et al. discloses hydrophilization processing can be carried out by carrying out the graft of the hydrophilic molecule to the grafted cellulose fiber. (See [0038]) Therefore, examiner notes both references are directed to the use of graft polymerization to produce hydrophilic coatings of cellulosic materials. The art is still deemed analogous and in the same field of endeavor.

6. In view of the amendment to the claims, the previous 35 U.S.C. 102(b) rejection of claims 1 and 2 has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of previously applied prior art.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 5-8 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soane et al. (US 6,379,753) in view of Hirano et al. (JP 2000-017572)

Regarding claim 1-3, Soane et al. discloses methods and compounds which may be used to modify cotton materials to improve properties such as resistance, grease repellency, soil resistance, permanent press properties, and quickness of drying. A variety of products may be obtained. (See Abstract) Soane et al. further discloses altering the properties of the textile fiber materials to include detergent free washing. (See Col 5, lines 1-5 and Col 9, lines 22-26) Soane et al. may comprise a synthetic backbone and hydrophilic groups grafted thereto. (See Col 5, lines 40-43) Soane et al. discloses the multifunctional polymers may include hydrophilic functional groups that are capable of interacting with the hydrophilic surface. (See Col 12, lines 52-55) Soane et al. discloses the graft copolymer is applied to the materials, such as cotton fabric (a hydrophilic surface) to produce a durable hydrophilic coating. (See Col 13, lines 4-6) Examiner therefore equates such treatment to the fabric to a hydrophilization treatment as claimed

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by applicant in claim 2. As such, examiner notes that the textile fabric of Soane would be exposed to grease, soil, and oily substances hence the suggestion of an grease repellency, soil resistance, and an oil repellent finish by Soane et al. One of ordinary skill in the art would expect that the hydrophilization treatment would inherently provide an increase in moisture absorption ratio. The burden is upon applicant to prove otherwise. Soane et al. discloses all of the claim limitations as set forth above but the reference does not explicitly disclose a carboxymethylation step or the moisture absorption ratio of the cellulose fiber is adjusted to be 7.1% or more by the hydrophilization treatment.

Hirano et al. discloses a method to afford a cellulose-based fiber or cellulose-based textile product with excellent anti-yellowing function suitable for underwear by hydrophilization treatment of the above fiber or textile product. (See Abstract and [0016]) Hirano et al. discloses carrying out hydrophilization processing of the cellulose fiber or fiber product with 7.1% or more for the moisture absorption. (See [0016] and 7.1%-20% in [0010]) Hirano et al. discloses a carboxyl group is introduced into the cellulose fiber by carboxymethylation. (See [0012] and [0024]) Hirano et al. discloses hydrophilization processing can be carried out by carrying out the graft of the hydrophilic molecule to the grafted cellulose fiber. (See [0038])

As Soane et al. and Hirano et al. are both directed to the treatment of cellulose fibers and fabrics to provide a hydrophilic property, the art is analogous. Therefore, it would have

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been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Hirano et al. in the method as disclosed by Soane et al. in order to modify and tailor hydrophilic and moisture absorption ratio properties of the final fiber products to provide a detergent free washing. (See Soane Col 5, lines 1-5 and Hirano [0010] and [0016])

Regarding claim 5, Hirano et al. discloses heat treatment temperature can be 60 degrees C or more and can usually be less than 40°C although the concentration of the alkali-metal salt of the monochloroacetic acid should just set the conditions of processing liquid that the target workability is obtained suitably can be 100 or more g/l preferably. A sodium hydroxide can be used for the processing liquid in which a cellulosic fiber or a cellulosic fiber product is contacted at the hydroxide of alkali metal, and a concrete target. Reactivity tends to go up and usually needs to make NaOH concentration 20 or more g/l. (See [0031-0035])

Regarding claim 6, Hirano et al. discloses the carboxymethylation degree is adjusted to be 0.1 to 10% by mole. (See Hirano [0024])

Regarding claims 7, 18 and 21, Hirano et al. discloses hydrophilization processing can be carried out by carrying out the graft of the hydrophilic molecule to the grafted cellulosic fiber or cellulosic fiber product of a hydrophilic molecule. As a hydrophilic molecule,

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hydrophilization processing can be carried out by carrying out the graft of the vinyl system copolymer of methacrylamide. The hydrophilic monomer can be a methacrylic acid or methacrylamide. (See [0038]-[0039] and [0047]-[0048])

Regarding claims 8, 19 and 22, Hirano et al. discloses a hydrophilic molecule carries out a graft, and the rate of a graft is 2% or more preferably, and is 20% or less still more preferably 25% or less preferably 30% or less 1% or more. (See [0041] and [0047])

Regarding claims 17 and 20, as set forth above examiner has reason to believe that the textile fabric of Soane would be exposed to grease, soil, and oily substances hence the suggestion of an grease repellency, soil resistance, and an oil repellent finish by Soane et al. Examiner also notes that the detergent free washing is clearly provided for by the Soane et al. prior art. (See Col 5, lines 1-5) However, Soane et al. does not explicitly teach monochloroacetic acid to aid in heat treatment.

Hirano et al. discloses heat treatment temperature can be 60°C or more and can usually be less than 40°C. although the concentration of the alkali-metal salt of the monochloroacetic acid should just set the conditions of processing liquid that the target workability is obtained suitably can be 100 or more g/l preferably. A sodium hydroxide can be used for the processing liquid in which a cellulosic fiber or a cellulosic fiber

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product is contacted at the hydroxide of alkali metal, and a concrete target. Reactivity tends to go up and usually needs to make NaOH concentration 20 or more g/l. (See [0031-0035]) Hirano et al. discloses hydrophilization processed cheesecloth obtained by immersion of the hydrophilization treated cloth in a solution of artificial sweat which includes oleic acid and gelatin. (See [0052]) Examiner notes that applicant relies on the results of Table 1 at page 25 for support for the claim limitation of the remaining ratio of 10 to 42%. (See remarks pg. 10) As such, examiner further notes that there is substantial similarity in the examples of the instant application and the Hirano et al. prior art. (See [0053]-[0054] and [0050]-[0053], respectively) Therefore, with there being no recited unexpected results, examiner has reason to believe that the limitations as claimed by applicant are prima facie obvious in view of the prior art.

One of ordinary skill in the art would have been easily motivated at the time of the invention to utilize the monochloroacetic acid and heating process as taught by Hirano et al. in the process as disclosed by Soane et al. in order to better tailor workability during the treatment of the fiber or fabric.

The modified Soane et al. reference does not explicitly disclose the specific time duration of 6 to 48 hours for contact with the treatment solution. Since the instant specification is silent to unexpected results, specific time duration of contact with solution is not considered to confer patentability to the claims. As the degree of solvency is a variable

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that can be modified, among others, by adjusting the time of contact with treatment solution, the precise time duration of said contact would have been considered an obvious modification by one having ordinary skill in the art at the time the invention was made. In the instant case, Hirano does disclose that the cheesecloth was immersed in the water solution (processing liquid) of monochloroacetic acid sodium hydroxide, heating at 60°C and performing processing for 1 hour. (See [0050]) As such, without showing unexpected results, the claimed time duration cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of time for the contact of cellulose fiber with treatment solution for the purpose of achieving desired degree of solvency, since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is (571)270-3162. The examiner can normally be reached on Monday-Thursday, 8AM-5PM EST, alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

/ACS/
Examiner
11/5/09